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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO..
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09/975,989

10/15/2001

Masaru Ogata

862.C2412

9562

5514

7590

12/11/2003

FITZPATRICK CELLA HARPER & SCINTO  
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NEW YORK, NY 10112

EXAMINER

NGUYEN, HUNG

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/975,989

Applicant(s)

OGATA, MASARU

Examiner

Hung Henry V Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 9/8/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4,8-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-4,8-14,16,17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 8, 2003 has been entered.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 10, 13, 16-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaji et al (U.S.Pat. 5,559,584) in view of Tanaka et al (US 2003/0020888 A1).

With respect to claims 1-4, 10, 13, 16-17 and 19, Miyaji et al discloses an exposure apparatus for exposing a pattern formed on a mask onto a substrate and comprising substantially all of structures set forth in the instant claims including: a projection optical system (PL); a first and second vessels for providing gas into the illumination system (IL) and projection optical system, a gas supply device and exhausting system (see fig.1); an oxygen sensor (S)/a densiometer for measuring concentration of the gas; and a controller for adjusting the pressure

inside the first and second vessels so that the internal pressure of the vessel exceeds the atmospheric pressure after a vacuum state is obtained by evacuating an interior of the vessel (see fig.1 of Miyaji). Miyaji teaches pressure valves (V1, V2 and V6) for keeping the internal pressures of the vessels and the atmospheric pressure at a desired value (see col.6, lines 52-57 and col.8, lines 50-55). Miyaji does not expressly disclose the differential pressure between the internal pressure and the atmospheric pressure being controlled so as not to exceed a differential pressure constant. Tanaka et al discloses an exposure apparatus and method comprising a vessel which is placed within one of the illumination optical system (200) and the projection optical system (PL) and gas supplying means (150) for supplying an inert gas to the vessel; and a vacuum exhaust means (160) for vacuum evacuating the vessel; an atmospheric pressure (PS4) for measuring the atmospheric pressure; pressure sensors (PS1-PS3) for detecting the internal pressure inside the vessel and controller (402) for controlling a differential pressure between the internal pressure of the vessel and the atmospheric pressure. Tanaka suggests that the internal pressure of the vessel are maintained at a predetermined target value and adjusted in conformance to the atmospheric pressure (see fig.1 and section [0074]). In view of such teachings, it would have been obvious to combine the teachings of Miyaji and Tanaka to obtain the invention as specified in the above claims. It would have been obvious to a skilled artisan to keep the differential pressure between the internal pressure of the vessel and the atmospheric pressure in the exposure device of Miyaji at a predetermined differential pressure constant and preventing a differential pressure between an internal pressure of the vessel and atmospheric pressure from exceeding a predetermined valued as suggested by Tanaka. The purpose of doing so would have been to avoid contamination of the optical elements and avoid fluctuations in the

optical performance of the exposure device whereby the quality of the images is greatly improved.

3. Claims 8-9, 11-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaji et al (U.S.Pat. 5,559,584) in view of Tanaka et al (US 2003/0020888 A1) and further in view of Umatate et al (U.S.Pat. 5,243,377).

With respect to claims 8-9, 11-12, and 14, Miyaji as modified by Tanaka discloses an exposure apparatus comprising substantially all of the limitations of the instant claims as discussed except for the exposure apparatus being communicated via a computer network such as a LAN or Internet. Umatate et al discloses a plural exposure apparatus and a host management system (H-COM), a network interface, a computer and the information relating to each of the exposure apparatuses can be communicated by a computer network (see fig.1 of Umatate et al). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Miyaji as modified by Tanaka with Umatate to obtain the invention as specified in claims 11-12 and 14. It would have been obvious to a skilled artisan to utilize a computer network as taught by Umatate for the exposure apparatus of Miyaji as modified by Tanaka for remotely and automatically managing, analyzing, troubleshooting and maintenance the exposure apparatus.

***Allowable Subject Matter***

4. Claims 18 and 20 are allowed. While the prior art of record teaches an exposure apparatus having vacuum exhaust device but does not specifically disclose a vacuum exhaust

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means for evacuating an internal pressure of a vessel to pulsate the internal pressure at a predetermined frequency, and satisfying conditions as recited in the claims 18 and 20 of the present invention.

***Response to Amendment/Arguments***

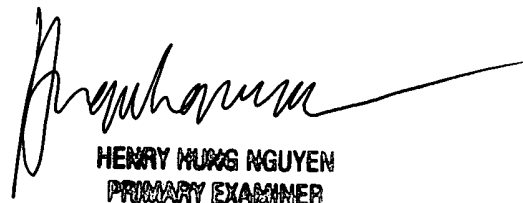
5. Applicant's amendments filed September 2, 2003 have been entered. Turning to the prior art rejection, applicant's arguments have been carefully reviewed but have been traversed in view of new grounds of rejection as set forth above.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

hvn  
12/4/03

  
**HENRY HUNG NGUYEN**  
**PRIMARY EXAMINER**